10

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/700,794	11/04/2003	Paul E. West	PACI002	5509

7590 03/09/2007

William C. Milks, III
RUSSO & HALE LLP
401 Florence Street
Palo Alto, CA 94301

EXAMINER	
WYATT, KEVIN S	
ART UNIT	PAPER NUMBER
2878	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/700,794	WEST ET AL.	
	Examiner	Art Unit	
	Kevin Wyatt	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 22 January 2007.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-26 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-26 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 22 January 2007 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to the Amendment after non-final and remarks filed on 01/22/2007. Currently, claims 1-26 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-2, 4, 6, 9-10, and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomita (U.S. Patent No. 6,201,227 B1) in view of Kley (Publication No. U.S. 2002/0135755 A1).

Regarding claim 1, Tomita shows in Figs.1 and 5-6, a scanning probe microscope for imaging the surface of a sample, comprising: a sensor (vibration–detecting portion consisting of a quartz oscillator (4), coarse displacement means (6), z-fine displacement element (11)) comprising an oscillator for producing a signal; a probe (1) connected to the sensor; means for scanning the probe (combination of XY fine displacement element (13) and XY scanning circuit (14), col. 3, lines 20-22) with respect to the sample; sensor electronics (combination of current/voltage amplifier (5), z servo circuit (12)) connected to the sensor for monitoring the signal produced by the sensor; a frequency generator (2, i.e., piezoelectric oscillator or PZT) connected to the sensor electronics to supply a signal over a range of frequencies near a resonant frequency of

the oscillator, whereby the resonant frequency of the oscillator is determined by sweeping the frequency generator from a starting frequency to an ending frequency and monitoring an output signal from the oscillator (col. 4, lines 5-21); and means responsive to the signal produced by the sensor electronics for moving the probe toward or away from the surface of the sample (col. 6, lines 30-33). Tomita does not disclose an optical microscope disposed with the probe positioned between the optical microscope and the surface of the sample with the probe within a field of view of the optical microscope for viewing a location of the probe mounted to the sensor for helping to position the probe with respect to a region of the surface of the sample to be imaged. Kley shows in Fig. 1, an optical microscope (160) disposed with a probe (102) positioned between the optical microscope (160) and the surface of the sample (104, i.e., object) with the probe within a field of view of the optical microscope for viewing a location of the probe mounted to the sensor for helping to position the probe with respect to a region of the surface of the sample to be imaged (paragraphs 0151 and 0152). It would have been obvious to one skilled in the art to provide the optical microscope of Kley to the device of Tomita for the purpose of localizing an area for the placement of tip over the sample.

Regarding claims 2, 4, 6, 9-10, and 12-13, Tomita discloses the claimed invention as stated above. In addition, Tomita discloses that the oscillator (4, i.e., quartz oscillator) is a resonant crystal oscillator (col. 4, lines 9-11) in accordance with claim 2. Also, Tomita provides a resonant crystal oscillator that is self-excited (i.e., requires no input voltage for oscillations) in accordance with claim 4. Tomita shows in Fig. 1 an

external modulator (combination of piezoelectric oscillator (2), quartz oscillator holder (25), XY fine displacement (13), and Z fine displacement (11)) is provided proximate to the resonant crystal oscillator, and further comprising an excitation circuit for supplying an excitation signal to drive the modulator (col. 4, lines 3-9 and 57-58) in accordance with claim 6. Tomita discloses a scanning probe microscope comprising a holder for the sensor that facilitates rapid probe exchange (col. 3, lines 51-57) in accordance with claim 9. Tomita further discloses that the oscillator is operated at substantially its resonance frequency (col. 4 lines 9-11) in accordance with claim 10. Tomita also discloses that the oscillator operates in a shear force mode by vibrating the probe approximately parallel to the surface of a sample (col. 3, lines 27-28) in accordance with claim 12. Tomita further discloses a cantilever (cantilever spring extending from the resilient body (16)) and wherein the probe is mounted to the cantilever and the cantilever is in turn mounted to the sensor to connect the probe to the sensor (col. 4, lines 24-25 and 41-43) in accordance with claim 13. Tomita does not disclose an optical microscope disposed with the probe positioned between the optical microscope and the surface of the sample with the probe within a field of view of the optical microscope for viewing a location of the probe mounted to the sensor for helping to position the probe with respect to a region of the surface of the sample to be imaged. Kley shows in Fig. 1, an optical microscope (160) disposed with a probe (102) positioned between the optical microscope (160) and the surface of the sample (104, i.e., object) with the probe within a field of view of the optical microscope for viewing a location of the probe mounted to the sensor for helping to position the probe with respect to a region of the surface of the

sample to be imaged (paragraphs 0151 and 0152). It would have been obvious to one skilled in the art to provide the optical microscope of Kley to the device of Tomita for the purpose of localizing an area for the placement of tip over the sample.

4. Claims 3, 5 and 7 rejected under 35 U.S.C. 103(a) as being unpatentable over Tomita (U.S. Patent No. 6,201,227 B1) in view of Kley (Publication No. U.S. 2002/0135755 A1) as applied to claim 2 above, and further in view of Sato (U.S. Patent No. 6,046,448).

Regarding claims 3 and 5, the modified device of Tomita discloses the claimed invention as stated above. The modified device of Tomita does not disclose that the resonant crystal oscillator is a quartz crystal cross oscillator that is self-excited comprising a crystal base and an arm to which the probe is connected. Sato shows in Figs. 3-5 a cross crystal oscillator (18) is self-excited (i.e., requires no input voltage for oscillations). It would have been obvious to one skilled in the art to provide the cross crystal oscillator of Sato to the modified device of Tomita for the purpose of improving heat dissipation during oscillation.

Regarding claim 7, the modified device of Tomita discloses the claimed invention as stated above. The modified device of Tomita does not disclose an external modulator provided proximate to a quartz crystal cross oscillator. Sato shows in Figs. 3-5 a cross crystal oscillator (25). It would have been obvious to one skilled in the art to provide the cross crystal oscillator of Sato to the modified device of Tomita for the purpose of improving heat dissipation during oscillation.

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tomita (U.S. Patent No. 6,201,227 B1) in view of Kley (Publication No. U.S. 2002/0135755 A1).

Regarding claim 11, the modified device of Tomita discloses the claim invention as stated above. The modified device of Tomita does not disclose a scanning probe microscope wherein the resonance frequency is greater than 400 kHz. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum measurements involves only routine skill in the art. It would have been obvious to one skilled in the art to provide a crystal oscillator having a resonant frequency greater than 400 kHz the modified device of Tomita for the purpose of providing a better resolution of three-dimensional image.

6. Claims 14-15,18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomita (U.S. Patent No. 6,201,227 B1) in view of Kley (Publication No. U.S. 2002/0135755 A1) as applied to claims 1 above, and further in view of Chen (U.S. Patent No. 6,169,281).

Regarding claim 14, the modified device of Tomita discloses the claimed invention as stated above. The modified device of Tomita does not disclose that the means for scanning the probe with respect to the sample comprises a first electromechanical transducer and a second electromechanical transducer, the first electromechanical transducer having a first resonant frequency and the second electromechanical transducer having a second resonant frequency substantially lower than the first resonant frequency, and wherein the means responsive to the signal produced by the sensor electronics for moving the probe toward or away from the

surface of the sample comprises a third electromechanical transducer having a third resonant frequency substantially higher than the first resonant frequency. Chen shows in Fig. 8, that the means for scanning the probe with respect to the sample comprises a first electromechanical transducer (162 and 164, i.e., -X electrode and +X electrode), the first electromechanical transducer having a first resonant frequency (col.15, lines 34-36), and the second electromechanical transducer (172 and 174, i.e., -Y electrode and +Y electrode) having a second resonant frequency (col.15, lines 36-37) substantially lower than the first resonant frequency, and wherein the means responsive to the signal produced by the sensor electronics for moving the probe toward or away from the surface of the sample comprises a third electromechanical transducer (184, i.e., excitation electrode) having a third resonant frequency substantially higher than the first resonant frequency (col. 15, lines 37-40). It would have been obvious to one skilled in the art to provide the first, second and third electromechanical transducers of Chen to the modified device of Tomita for the purpose of providing a high response to a wide range of voltage signals.

Regarding claims 15, the modified device of Tomita discloses the claimed invention as stated above. The modified device of Tomita does not disclose the first electromechanical transducer scans in an X direction and has a resonant frequency R(X), the second electromechanical transducer scans in a Y direction and has a resonant frequency R(Y), and the third electromechanical transducer scans in a Z direction and has a resonant frequency R(Z), and R(Z) >> R(X) >> R(Y). Chen discloses that the first electromechanical transducer scans in an X direction and has a resonant

frequency R(X), the second electromechanical transducer scans in a Y direction and has a resonant frequency R(Y), and the third electromechanical transducer scans in a Z direction and has a resonant frequency R(Z), and R(Z) >> R(X) >> R(Y) (col. 15, lines 37-40 and 60-61). It would have been obvious to one skilled in the art to provide the first, second and third electromechanical transducers of Chen to the modified device of Tomita for the purpose of obtaining a high response to a wide range of voltage signals.

Regarding claim 18, the modified device of Tomita discloses the claimed invention as stated above. The modified device of Tomita does not disclose that the means responsive to the signal produced by the sensor electronics for moving the probe toward or away from the surface of the sample comprises a first feedback loop for producing a first control signal, a first electromechanical transducer having a first resonant frequency, a second feedback loop for producing a second control signal, and a second electromechanical transducer having a second resonant frequency, the first resonant frequency being lower than the second resonant frequency. Chen shows in Figs. 8-9, that the means responsive to the signal produced by the sensor electronics for moving the probe toward or away from the surface of the sample comprises a first feedback loop (a laser detector (138), band pass filter (244), x demodulator (243), ADC (250), computing system (144), DAC (193), amp (192), X-axis driver (118)) for producing a first control signal (col. 6, lines 21-22), a first electromechanical transducer (162 and 164, i.e., X-electrodes) having a first resonant frequency, a second feedback loop (a laser detector (138), band pass filter (140), z demodulator (141), comparison circuit (142), integrator (148), ADC (149) computing system (144), DAC (154), Z-axis

driver (126)) for producing a second control signal (col. 6, lines 24-25), and a second electromechanical transducer (184, i.e., excitation electrode) having a second resonant frequency, the first resonant frequency being lower than the second resonant frequency (col. 6, lines 20-25). It would have been obvious to one skilled in the art to provide the first, second and third electromechanical transducers of Chen comprising feedback loops to the modified device of Tomita for the purpose of providing greater control of tip motion.

Regarding claim 19, the modified device of Tomita discloses the claimed invention as stated above. The modified device of Tomita does not disclose a scanning probe microscope, wherein the first electromechanical transducer is employed to level the surface of the sample with respect to the sensor, whereby a range of motion imparted by the second electromechanical transducer to the probe is small. Chen discloses that the first electromechanical transducer is employed to level the surface of the sample with respect to the sensor, whereby a range of motion imparted by the second electromechanical transducer (184, i.e., excitation electrode) to the probe is small (col. 8, lines 13-24). It would have been obvious to one skilled in the art to provide the first and second transducers of Chen to the modified device of Tomita, having a small range of motion for the purpose of maintaining stability of tip motion.

Regarding claim 20, the modified device of Tomita discloses the claimed invention as stated above. The modified device of Tomita does not that the motions imparted by the first and second electromechanical transducers to the probe are orthogonal to the motion imparted to the probe by the third electromechanical

transducer, whereby a range of motion imparted by the third electromechanical transducer to the probe is less than a range of motion imparted to the probe by the first and second electromechanical transducers. Chen shows in Fig. 8, that the motions imparted by the first and second electromechanical transducers to the probe are orthogonal to the motion imparted to the probe by the third electromechanical transducer (col. 6, lines 55-58), whereby a range of motion imparted by the third electromechanical transducer to the probe is less than a range of motion imparted to the probe by the first and second electromechanical transducers (Figs. 10-11). It would have been obvious to one skilled in the art to provide the provide the first, second and third electromechanical transducers of Chen to the modified device of Tomita where motions of the first and second electromechanical transducers are orthogonal to the third transducer for the purpose of generating a tip motion that results in a signal producing a three dimensional image.

7. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tomita (U.S. Patent No. 6,201,227 B1) in view of Kley (Publication No. U.S. 2002/0135755 A1) and Chen (U.S. Patent No. 6,169,281) as applied to claim 15 above, and further in view of Furukawa (U.S. Patent No. 6,207,069 B1).

Regarding claim 16, the modified device of Tomita discloses the claimed invention as stated above. The modified device of Tomita does not disclose that the electromechanical transducers that are piezoelectric ceramic actuators. Furukawa shows in Figs. 1-3 a ceramic piezoelectric actuator. It would have been obvious to one

skilled in the art provide the ceramic piezoelectric actuator of Furukawa to the modified device of Tomita for the purpose of producing the piezoelectric actuator at a lower cost.

8. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tomita (U.S. Patent No. 6,201,227 B1) in view of Kley (Publication No. U.S. 2002/0135755 A1) and Chen (U.S. Patent No. 6,169,281) as applied to claim 15 above, and further in view of Normen (U.S. Patent No. 6,577,977 B2).

Regarding claim 17, the modified device of Tomita discloses the claimed invention as stated above. The modified device of Tomita does not disclose that the first electromechanical transducer is a voice coil and the second and third electromechanical transducers are piezoelectric ceramic actuators. Normen shows in Fig. 6, a transducer comprising a voice coil. It would have been obvious to provide the transducer of Normen to the modified device of Tomita for the purpose of providing low cost, overall performance.

9. Claims 21-22, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomita (U.S. Patent No. 6,201,227 B1) in view of Chen (U.S. Patent No. 6,169,281):

Regarding claim 21, Tomita shows in Figs.1 and 5-6, a scanning probe microscope for imaging the surface of a sample, comprising: a) a sensor (vibration–detecting portion consisting of a quartz oscillator (4), coarse displacement means (6), z-fine displacement element (11)) comprising an oscillator for producing a signal, a probe (1) connected to the sensor, and c) sensor electronics (combination of current/voltage amplifier (5), z servo circuit (12)) connected to the sensor for monitoring the signal

produced by the sensor (col. 5, lines 45-48); a frequency generator (2, i.e., piezoelectric oscillator or PZT) connected to the sensor electronics to supply a signal over a range of frequencies near a resonant frequency of the oscillator, whereby the resonant frequency of the oscillator is determined by sweeping the frequency generator from a starting frequency to an ending frequency and monitoring an output signal from the oscillator (col. 4, lines 5-21). Tomita does not disclose a means for scanning the probe with respect to the sample comprising a first electromechanical transducer and a second electromechanical transducer, the first electromechanical transducer having a first resonant frequency and the second electromechanical transducer having a second resonant frequency substantially lower than the first resonant frequency; and means responsive to the signal produced by the sensor electronics for moving the probe toward or away from the surface of the sample comprising a third electromechanical transducer having a third resonant frequency substantially higher than the first resonant frequency. Chen shows in Fig. 8 a means for scanning the probe with respect to the sample comprising a first electromechanical transducer (162 and 164, i.e., -X electrode and +X electrode) and a second electromechanical transducer (172 and 174, i.e., -Y electrode and +Y electrode), the first electromechanical transducer having a first resonant frequency and the second electromechanical transducer having a second resonant frequency substantially lower than the first resonant frequency (col.15, lines 34-37); and means responsive to the signal produced by the sensor electronics for moving the probe toward or away from the surface of the sample comprising a third electromechanical transducer (184, i.e., excitation electrode) having a third resonant

frequency substantially higher than the first resonant frequency (col.15, lines 34-40). It would have been obvious to one skilled in the art to provide the first second and third electromechanical transducers of Chen to the device of Tomita for the purpose of obtaining a high response to a wide range of voltage signals.

Regarding claim 22, Tomita discloses the claimed invention as stated above. Tomita does not disclose the first electromechanical transducer scans in an X direction and has a resonant frequency R(X), the second electromechanical transducer scans in a Y direction and has a resonant frequency R(Y), and the third electromechanical transducer scans in a Z direction and has a resonant frequency R(Z), and R(Z) >> R(X) >> R(Y). Chen discloses that the first electromechanical transducer scans in an X direction and has a resonant frequency R(X), the second electromechanical transducer scans in a Y direction and has a resonant frequency R(Y), and the third electromechanical transducer scans in a Z direction and has a resonant frequency R(Z), and R(Z) >> R(X) >> R(Y) (col. 15, lines 37-40 and 60-61). It would have been obvious to one skilled in the art to provide the first, second and third electromechanical transducers of Chen to the device of Tomita for the purpose of obtaining a high response to a wide range of voltage signals.

Regarding claim 25, Tomita discloses the claimed invention as stated above. Tomita does not that the motions imparted by the first and second electromechanical transducers to the probe are orthogonal to the motion imparted to the probe by the third electromechanical transducer, whereby a range of motion imparted by the third electromechanical transducer to the probe is less than a range of motion imparted to the

probe by the first and second electromechanical transducers. Chen shows in Fig. 8, that the motions imparted by the first and second electromechanical transducers to the probe are orthogonal to the motion imparted to the probe by the third electromechanical transducer (col. 6, lines 55-58), whereby a range of motion imparted by the third electromechanical transducer to the probe is less than a range of motion imparted to the probe by the first and second electromechanical transducers (Figs. 10-11). It would have been obvious to one skilled in the art to provide the provide the first, second and third electromechanical transducers of Chen to the modified device of Tomita where motions of the first and second electromechanical transducers are orthogonal to the third transducer for the purpose of generating a tip motion that results in a signal producing a three dimensional image.

10. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tomita (U.S. Patent No. 6,201,227 B1) in view of Chen (U.S. Patent No. 6,169,281) as applied to claim 21 above, and further in view of Furükawa (U.S. Patent No. 6,207,069 B1).

Regarding claim 23, the modified device of Tomita discloses the claimed invention as stated above. The modified device of Tomita does not disclose that the electromechanical transducers that are piezoelectric ceramic actuators. Furukawa shows in Figs. 1-3 a ceramic piezoelectric actuator. It would have been obvious to one skilled in the art provide the ceramic piezoelectric actuator of Furukawa to the device of Tomita for the purpose of producing the piezoelectric actuator at a lower cost.

11. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tomita (U.S. Patent No. 6,201,227 B1) in view of Chen (U.S. Patent No. 6,169,281) as applied to claim 21 above, and further in view of Normen (U.S. Patent No. 6,577,977 B2).

Regarding claim 24, Tomita discloses the claimed invention as stated above. Tomita does not disclose that the first electromechanical transducer is a voice coil and the second and third electromechanical transducers are piezoelectric ceramic actuators. Normen shows in Fig. 6, a transducer comprising a voice coil. It would have been obvious to provide the transducer of Normen to the device of Tomita for the purpose of providing low cost, overall performance.

12. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tomita (U.S. Patent No. 6,201,227 B1) in view of Chen (U.S. Patent No. 6,169,281) as applied to claims 21 above, and further in view of Kley (Publication No. U.S. 2002/0135755 A1).

Regarding claim 26, the modified device of Tomita discloses the claimed invention as stated above. The modified device of Tomita does not disclose the scanning probe microscope comprises an optical microscope for viewing the location of the probe mounted to the sensor. Kley shows in Fig. 1, an optical microscope (160) for viewing a location of the probe mounted to the sensor (paragraphs 0151 and 0152). It would have been obvious to one skilled in the art to provide the optical microscope of Kley to the device of modified Tomita for the purpose of localizing an area for the placement of tip over the sample.

Response to Arguments

13. Applicant's argument regarding the foregoing amendment of claims 1 and 21 filed 01/22/2007 has been fully considered. However, the amendment is not sufficient overcome the 103 rejection of these claims because the limitations corresponding to this amendment are disclosed in the Tomita patent.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Wyatt whose telephone number is (571)-272-5974. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571)-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

K.W.

K.W.

Georgia Y. Epps

Georgia Epps
Supervisory Patent Examiner
Technology Center 2800